

SPELLING FOR THE EDUCABLE MENTALLY RETARDED PUPIL

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CHAPTER I

THE PROBLEM

Mentally handicapped students require a special program with a modification of school practices and educational services in order to develop to their maximum potential. Prior to the 1950's, the retention of mentally retarded pupils in a grade was not an uncommon practice. Eventually the child would be old enough that school attendance was no longer required. Often parents believed their child was incapable of receiving further help from the school. Teachers did not feel accountable for the child's low level of achievement, or lacked time and materials to devote to necessary modifications and individualized instruction. Schools usually felt more time and attention should be devoted to the average learner.

This project was designed to develop and test a spelling program for teaching educable mentally handicapped children of Junior High age to spell, commensurate with their needs and ability. Mentally handicapped students may be included in educable classes if their I.Q. range is between 50 and 75, or within a few points upward or downward. Slow learners with higher Intelligence Quotients may be included if their general level of functioning is low.

Mentally handicapped children have relative diffi-

culty in learning to spell. Incidental learning of spelling does not readily occur. Words used in everyday life must be taught by systematic methods. There is a need to determine (1) what intensive methods to use in teaching mentally handicapped children to spell, (2) what words should be included in a basic list, and (3) what activities will make effective learning as interesting as possible. There is a paucity of materials designed for such specific needs. Several standardized spelling scales which include words used in reading and writing are available as check lists.

Statement of the Problem

A spelling program that will meet the needs of educable mentally handicapped pupils should be developed and field tested. Organization, adaptation, and utilization of the limited materials presently available comprise a time-consuming process for the special education teacher. This project was designed to develop and test a program for teaching mentally handicapped children of Junior High age to spell.

I. PROCEDURE

The subjects in this study were the ten pupils enrolled in a Junior High Special Education class of Keokuk County, Iowa of an age range from age 13 through age 15. The students varied widely in their academic abilities. All

students have had recommended vision, hearing, and speech diagnosis, as well as I.Q. and achievement tests. Previous experience with the students assisted in determining the methods by which each student learns best. The study was conducted over a four week period.

It is assumed that growth in the ability to spell a selected list of words in a given period of time indicates the possibility of effective learning by the pupils over a longer period of time. The Courtis Learning Test in Spelling was devised to give an indication of pupil ability to learn. This test also enables the teacher to observe study habits of pupils.¹ Tests A and B of the Courtis Standard Learning Tests were given at the beginning of the study to help the teacher to observe and identify pupils whose study habits were relatively poor. A committee of three special education teachers checked the tests given before and after ten minutes of study by the pupils. The results were tabulated for each student. Identity numbers were assigned. This data showed which students profited from study, and which ones manifested either inability or habits of study that were not effective. Individual attention was given to help each pupil discover methods that were effective for him. Previous experience with the students and cumulative

¹Leo J. Brueckner and Guy L. Bond, The Diagnosis and Treatment of Learning Difficulties (New York: Appleton-Century-Crofts, Inc., 1955), pp. 353-357.

records assisted in determining the methods by which each child learned best.

The writing done by pupils in social situations such as writing sentences and simple experience stories was evaluated for the coefficient of misspelling, or the number of misspellings per 1000 words. Courtis devised this measurement to secure a measurement of a pupil's general ability to spell.¹ The coefficient should become gradually smaller as the child matures. A prevalence of meaningless misspellings in written work indicates spelling disability. A large proportion of nonphonetic errors is a symptom of serious deficiency. The coefficient of a child's misspelling gives a basis for prediction of his ability to achieve.

Spache's "six error tendencies" were used to help evaluate the types of errors made by pupils in regular written work.² These tendencies can be grouped for quick analysis under six categories:

1. Omissions
2. Additions or repetitions
3. Transpositions or reversals
4. Phonetic substitutions
5. Nonphonetic substitutions
6. Unrecognized or incomplete words

Error tendencies were tabulated. By comparing the results of this analysis with the coefficient of misspelling and Courtis Learning Test scores, an evaluation was made of each

¹Ibid., pp. 351-352.

²Ibid., pp. 357-359.

pupil's ability and remedial procedures to be used.

The spelling program used in this study included word lists derived from Dolch's 2,000 most common words¹ and Hildreth's list of most common words separated into levels of frequency of usage.² Only the first of Hildreth's six levels for elementary pupils was used in the study. Activities such as writing sentences and stories were centered around the word lists.

Methods of learning as recommended by Dolch,³ Fernald,⁴ and Younie⁵ were applied. Tests were made at the end of each week to determine the percentage of pupil improvement in spelling, if any. Individual study lists of words missed were kept by each pupil. Emphasis was placed on finding effective study methods, as related to ability.

Limitations

The subjects of this study cannot be considered as

¹William Edward Dolch, Better Spelling (Champaign, Illinois: The Garrard Press, 1942), pp. 257-270.

²Gertrude Hildreth, Teaching Spelling (New York: Holt, Rinehart, and Winston, 1962), pp. 310-342.

³Dolch, op. cit., pp. 22-59.

⁴Grace M. Fernald, Remedial Techniques in Basic School Subjects (New York: McGraw-Hill Book Co., Inc., 1943), pp. 187-205.

⁵William J. Younie, Instructional Approaches to Slow Learning (New York: Teachers College Press, Teachers College, Columbia University, 1967), pp. 132-135.

representative of the average special education class. The individual problems of each student tend to make unique instructional procedures a necessity. The small size of the group also limits the application of the findings to any other group. However, the results should give helpful points and indications for further research in methods and materials to use in teaching mentally handicapped pupils to spell words that will have utility in everyday life for them.

Basic Assumptions

It is assumed that all the individuals included in the study have had some helpful training in listening skills, phonics, syllabication, and the use of glossaries and dictionaries.

It is further assumed that mentally handicapped pupils will have common needs for spelling and can profit from systematic instruction.

The hypothesis is that small, but measurable gains can be made in spelling achievement if these methods and materials are used.

II. OVERVIEW

A review of literature concerning spelling and mental retardation is included in Chapter II. Chapter III describes the method and analysis of the study. A summary, recommendations, and conclusions constitute Chapter IV.

CHAPTER II

A REVIEW OF LITERATURE

This field report is concerned with the problem of developing a spelling program for the educable mentally retarded pupil. Its main objective is to explore the results of research and curricular experiences that can be adopted into a functional methodology to assist the pupil in his written communication needs.

I. PURPOSE

Spelling is an essential component in written communication. Its purpose is to promote ease and accuracy in interpretation of written expressions. Kirk and Johnson designate words used in everyday life, or words needed in adult life, as important spelling needs for the mentally retarded child.¹ Rothstein states that demands in spelling for the mentally retarded child should involve only those words which are likely to be included in the pupil's adult writing vocabulary. He suggests the use of standardized spelling scales as basic check lists. The limit of progress should be determined by the pupil and his needs.² Younie

¹Samuel A. Kirk and G. Orville Johnson, Educating the Retarded Child (Cambridge, Massachusetts: The Riverside Press, 1951), p. 271.

²Jerome H. Rothstein, Mental Retardation (New York: Holt, Rinehart, and Winston, 1961), p. 245.

advises that the written work of the slow learner will probably be limited to letter writing and simple work records. Pupils should therefore learn words used in spoken vocabulary and in school subjects such as home economics and industrial arts.¹ Hildreth advocates that spelling be taught as a tool for writing.² Essentially the spelling program must be oriented to the student's abilities and needs.

II. METHODS AND PROCEDURES

Fitzgerald makes the generalization that children who do not talk well, read well, or get along well, need guidance in social activities more than they need spelling. Spelling readiness may be developed through informal activities, such as play, music, excursions, discussions, and reading. Experience is valuable for spelling.³ Fernald advocates early written activities for children. Words used should be in the child's vocabulary and needed to express an idea of interest to him at the time he is writing it.⁴ She

¹ William J. Younie, Instructional Approaches to Slow Learning (New York: Teachers College Press, 1967), p. 83.

² Gertrude Hildreth, Teaching Spelling (New York: Holt, Rinehart, and Winston, 1962), p. iv.

³ James A. Fitzgerald, The Teaching of Spelling (Milwaukee: The Bruce Publishing Co., 1951), p. 83.

⁴ Grace M. Fernald, Remedial Techniques in Basic School Subjects (New York: McGraw-Hill Book Co., Inc., 1943), pp. 187-196.

recommends the use of phonetic words at first to insure spelling success.

Kirk and Johnson recommend that the spelling, reading, and writing materials used by the child be the same. The teaching of spelling should not begin before the child learns to write, since writing words rather than oral spelling is the important aim.¹ This consideration is not to be overlooked in teaching educable mentally retarded pupils of Junior High age, if spelling readiness has not been developed. In the lower grades, the speaking, reading, and writing vocabularies are closer together than they are later. Dolch² used lists of notable researchers, Gates, Fitzgerald, Jones, and Smith, to formulate a list of words for use in grades two through five. His minimum list of 2,000 words is estimated to include at least 95 per cent of all words written. One thousand of the words includes nearly 90 per cent of written matter, according to Dolch's studies. In the upper grades, the chance of words being used in everyday writing becomes less and less, as reading material becomes more advanced. However, Kirk and Johnson note that the mentally handicapped child will not exceed

¹ Kirk and Johnson, op. cit., pp. 271-272.

² William Edward Dolch, Better Spelling (Champaign, Illinois: The Garrard Press, 1942), pp. 7-11.

fourth- and fifth-grade ability in spelling or reading.¹
 Lists that are based on frequency of usage in written work
 have been devised by Dolch, Hildreth, and Fitzgerald.

²Hildreth states, "We do not know much about the
 relative difficulty of words children use in their writing."
 A study made by Betts in spelling revealed that seventeen
 authors unanimously agreed on the grade placement of only
 one word.³ However, many words do remain constant in fre-
 quency from grade to grade, and probably continue to be used
 in adulthood.⁴ Hildreth has arranged her vocabulary list
 with numerals following each word to indicate levels of fre-
 quency.⁵ The levels can assist in determining an achieve-
 ment level, the approximate size of spelling vocabulary, and
 a vocabulary list that should have utility in written
 expression.

Methods used with mentally handicapped students
 include slowing the rate of presentation, reducing the
 volume of the material, presenting the material in ways that
 involve more than one sensory pathway to learning, and
 reducing the complexity of the content. Younie states that

¹Kirk and Johnson, op. cit., p. 271.

²Hildreth, op. cit., p. 298.

³C. W. Hunnicutt and William J. Iverson (eds.),
Research in the Three R's (New York: Harper and Brothers,
 Publishers, 1958), p. 221.

⁴Ibid., p. 223. ⁵Hildreth, op. cit., pp. 311-342.

spelling should be very systematic, frequent, and allow a number of opportunities for repetition, and application of the words learned.¹ Hanna and Moore stress the need for auditory training.² Recommendations are to teach beginning and end consonants first, then double consonants, followed by short-vowel symbols and long-vowel symbols. These relations of sounds and letters should grow out of a word list appropriate for the child. An early study by Zyve favored teacher-directed study over individual study, the use of both list and context, and teacher-directed review.³ Studying the word may involve visual-perceptual skills in picturing the word, auditory recall when the child says something to himself that he can write, and kinesthetic learning for a child who traces the word and learns to think it in terms of hand movement. Fernald asserts that there will be a small group of children of the kinesthetic type in every room.⁴ Most authorities seem to agree on the needs for knowing what the word looks like, how the word sounds, and the meaning of the word.

Approaches to spelling may be structured, emphasizing the patterns common to our written language. Maxted has

¹Younie, op. cit., p. 93.

²Hunnicuttt and Iverson, op. cit., pp. 313-315.

³Ibid., pp. 307-309.

⁴Fernald, op. cit., p. 200.

devised the spelling wheel to utilize the rhyming practice of repetitious given vowel and consonant sounds. Such emphasis should help the mentally retarded child in the discrimination of sounds and patterns.¹ In a study of phoneme-grapheme relationships directed by Hanna, it was found that about 50 per cent of the words could be spelled on a phonological basis alone. Many most needed words would be included in this group.²

Diagnosis of spelling needs should be continuous in an effective program. Several measurement devices that can assist the teacher are listed by Brueckner and Bond.³ The coefficient of misspelling by Courtis measures the number of misspellings per 1000 words of informal written work. The effectiveness of pupil study habits may be tested by the Courtis Learning Test in Spelling. Spache lists six areas to assess in evaluation of pupils' work that should indicate needs in the spelling program. Other tests are also described in detail by Brueckner and Bond. These should have utility for the teacher of mentally retarded children.

¹ Mary Maxted, "Spelling Patterns With Spelling Wheels," Elementary English, XLV (November, 1968), 982-984.

² P. R. Hanna and others, "Phoneme-grapheme Correspondences as Cues to Spelling Improvement," Elementary English, XLVI (February, 1969), 207-212.

³ Leo J. Brueckner and Guy L. Bond, The Diagnosis and Treatment of Learning Difficulties (New York: Appleton-Century-Crofts, Inc., 1955), pp. 351-359.

III. SUMMARY

The educable mentally handicapped pupil needs to learn to spell words frequently used in everyday life, especially words that will be needed in adult life. After a pupil has achieved spelling readiness, he should begin written activities with phonetic words needed by him. Basic word lists and context spelling activities should be included in the spelling program. Diagnosis should be made to determine the way each child learns best. Teacher-directed emphasis on what the word looks like, how the word sounds, and the meaning of the word are essential. Educable mentally retarded pupils need a systematic program with much repetition and the application of words learned. Diagnosis of spelling needs and progress should be continuous.

CHAPTER III

METHOD AND ANALYSIS

This investigation was conducted to develop a spelling program to meet the needs of educable mentally handicapped pupils of Junior High age, with emphasis on (1) methods to use in teaching mentally retarded pupils to spell, (2) words to include in a basic list, and (3) some suitable activities to use for effective and interesting learning.

Need for the Study

Materials presently available for an organized spelling program that will meet specific needs of special education students are limited.

Hypothesis

It is assumed that mentally handicapped pupils have common needs for spelling and can profit from systematic instruction. Small, but measurable gains can be made in spelling achievement by educable mentally retarded pupils if suitable methods and materials are adopted.

Subjects

Subjects included in the study were a Junior High Special Education class of 10 pupils from Keokuk County, Iowa, assigned identification numbers for analysis and com-

parison of data as tabulated in Tables I through VI in the remainder of this chapter.

Other aspects related to learning activities and the information given on chronological age, Intelligence Quotient, vision, hearing, speech, and reading achievement level, as charted by Table I, are laterality and activity level. Subjects 1 and 7 are left-handed. Subject 5 is hyperactive, accompanied by poor coordination and other physical problems. Subject 9 has a low level of activity. These aspects have an influence on attention span, rate of progress, and perceptual- motor activities.

All the subjects received medical examinations before placement in the special class. I. Q. scores in the table are the most recent ones given. Vision tests are given annually. Hearing tests were given the previous year. Speech evaluation is made continuously. Reading achievement is assessed through diagnostic tests and teacher evaluation.

I. MEASUREMENTS

Tests A and B of the Courtis Standard Learning Tests were given at the beginning of the four week study as an indication of pupil ability to spell a selected list of words in a given period of time. These tests also enabled the teacher to observe and identify pupils whose study

TABLE I
 DESCRIPTIONS OF JUNIOR HIGH SPECIAL-EDUCATION CLASS
 PUPILS OF KEOKUK COUNTY

Subject (N = 10)	C.A.	I.Q.	Vision	Hearing	Speech	Reading Achievement (+ = above class average - = below class average)
1.	14-4	83			mild problem	
2.	14-0	82		moderate loss - both ears		- second grade
3.	14-11	78				
4.	14-0	74				- second grade
5.	14-0	61		mild loss		
6.	13-11	72	far- sighted, limited			+ fifth grade
7.	14-11	56				
8.	15-0	82	poor, with correction			
9.	14-5	78	poor, with correction		therapy continuing	
10.	15-5	86				+ sixth grade

habits were relatively poor.¹

The Courtis tests are measurement devices of pupil ability to spell before and after studying them. The tests are divided into four levels of difficulty. For the purpose of this study, it was judged that Test A was of average difficulty for the class. Test B measured the limit of ability for most pupils. The tests were given before study. The results were scored by a committee of three special education teachers. Each pupil was given an identity number. Then mimeographed copies of the same word list were given to the pupils. They were directed to study the words for ten minutes in any way they wished. They were told the test would be repeated to see how much their score on the test improved. After ten minutes of study the test was again dictated and scored. The number of words spelled correctly on each test was multiplied by 2 to express the scores as percentages. These are indices of pupil maturity. The results of Test A, which was judged to be the best indicator of class ability, are summarized in Table II.

The writing done by each pupil in social situations such as writing sentences and simple experience stories was evaluated for the coefficient of misspellings, or number of misspellings per 1,000 words. Courtis devised this measure-

¹Leo J. Brueckner and Guy L. Bond, The Diagnosis and Treatment of Learning Difficulties (New York: Appleton-Century-Crofts, Inc., 1955), pp. 353-357.

TABLE II
COURTIS TEST A BEFORE AND AFTER TEN MINUTES STUDY
JUNIOR HIGH EDUCABLE MENTALLY RETARDED CLASS

Subject (N = 10)	Before study	After study (10 minutes)	% Improvement
1.	92	94	2
2.	82	84	2
3.	96	100	4
4.	54	78	24
5.	66	78	12
6.	98	98	0
7.	98	98	0
8.	94	96	2
9.	76	88	12
10.	100	100	0
Mean =			5.8

ment to secure an indication of a pupil's ability to spell. A prevalence of meaningless misspellings in written work indicates disability. A large proportion of nonphonetic errors is a symptom of serious deficiency. The coefficient of misspelling enables the instructor to predict a pupil's ability to achieve.¹ Table III records the results of this

¹Ibid., pp. 350-352.

evaluation for the pupils included in this study.

TABLE III
COEFFICIENT OF MISSPELLING PER 1,000 WORDS
KEOKUK COUNTY SPECIAL CLASS JUNIOR HIGH

Subject (N = 10)	Coefficient (number of misspellings ÷ number of words written x 100)
1.	24
2.	65
3.	42
4.	29
5.	22
6.	52
7.	66
8.	70
9.	47
10.	58

The coefficients were probably lowered because of special emphasis on spelling during the study, and the conscientious use of the dictionary by the pupils. These were desirable outcomes of the study, but lowered the validity of the measurement.

The types of errors made by pupils in regular written work were analyzed according to six categories of error

tendencies as devised by Spache.¹ These types of errors are grouped: (1) omissions; (2) additions or repeated letters; (3) transpositions or reversals; (4) phonetic substitutions; (5) nonphonetic substitutions; (6) words that are unrecognizable or incomplete. Error tendencies for the Junior High class were included in this study, for the purpose of evaluating pupil ability and methods of teaching to be employed. Table IV shows this analysis.

TABLE IV
TYPICAL SPELLING ERRORS ON TEST
KEOKUK COUNTY SPECIAL CLASS
JUNIOR HIGH

Subject (N = 10)	Type of Error	% on Given Test
1.	a) Omissions	1.a-4, b-8, c-4, d-12
2.	b) Additions/Repetitions	2.d-16, e-24, f-4
3.	c) Transpositions/ Reversals	3.a-8, c-4, d-4
4.	d) Phonetic Substitutions	4.a-4, d-16, e-12, f-4
5.	e) Nonphonetic Substitutions	5.a-12, d-28
6.	f) Unrecognizable- Incomplete	6.a-4
7.		7.a-8, b-12, c-4, d-4
8.		8.a-4, e-16
9.		9.a-16, c-4, d-16, e-28
10.		10.d-4

¹Ibid., pp. 357-361.

Analysis of the types of errors most commonly made show a need for exercising care in pronunciation, special help in word study, and phonic instruction for some pupils. Poor spellers tend to make fewer phonetic additions or letter substitutions.

The Language Master was used to help determine which students could learn best through auditory methods. The results were tabulated as to positive, little or no gain, and negative effect in learning a given list of words. The results are shown in Table V.

TABLE V
USE OF THE LANGUAGE MASTER AS A SPELLING AID FOR
SPECIAL CLASS PUPILS 1971

Subject (N = 10)	+ = positive aid 0 = little or no gain - = negative
1.	0
2.	-
3.	0
4.	0
5.	0
6.	0
7.	0
8.	0
9.	+
10.	0

Indications are that the Language Master should be used as an individual aid by the pupil who profited from its use.

II. MATERIALS

A basic word list for possible use by Junior High special education classes was developed by combining words from the Dolch minimum word list and Hildreth's frequency of usage levels. Words from the first and second levels of frequency were used in this study. These lists are described in Chapter II, A Review of Literature. The list was then compared to the list of familiar words recommended for use in the regular classroom as a basic list for the Cherry Creek Elementary School of Englewood, Colorado. An extensive study in spelling was conducted in the Cherry Creek School District by Dr. Feldman in recent years.¹ Most of the words were found to be included in the combination list developed for Junior High special education classes.

Activities designed to include the derived list in contextual spelling were structured and repetitious. Stories, letters, simple reports, filling in blanks, announcements, sentence completion, puzzles, and games were used in combination with phonic instruction and testing

¹Based on curriculum guide and personal interview June 3, 1971, Administrative Office, Cherry Creek School District, 4700 South Yosemite, Englewood, Colorado 80222.

before and after study. Aids used were phonic learning devices and the Language Master.

At the end of the study, some pupils had made noticeable gains in phonics, spelling attack on new words, and spelling consciousness, or a desire to spell correctly. An evaluation was made to indicate areas of specific group or individual needs. Table VI shows some areas of study where individual attention should be focused.

TABLE VI
AREAS OF NEEDED STUDY KEOKUK COUNTY CLASS
JUNIOR HIGH EDUCABLE MENTALLY RETARDED
1971

Subject (N = 10)	Instructional Techniques To Be Used
1.	training- auditory discrimination
2.	training- auditory discrimination phonics
3.	vowel sounds
4.	phonics
5.	visual-perceptual training
6.	visual-perceptual training advance to levels 3, 4 Hildreth frequency levels
7.	visual-perceptual training
8.	phonics
9.	oral spelling practice with Language Master
10.	visual-perceptual training advance to levels 3, 4 Hildreth frequency levels

III. SUMMARY

A four week field study was made during April, 1971 of a Keokuk County, Iowa Junior High Special Class spelling program. Pupils were assigned the same identification number throughout the study. Cumulative records and past experience with the pupils assisted in determining limitations and methods by which each pupil learned best. Study habits were observed. The percentage of improvement on a list of words after study was tabulated. A measurement of each pupil's ability to spell was used as an indicator of results that could reasonably be expected of each pupil. Types of errors were analyzed to evaluate pupil ability and methods of teaching to be employed. The use of spelling aids, such as phonic aids and the Language Master was evaluated on an individual basis. Areas where individual and group needs could be met were considerations for further activities and intensive instruction. Teacher assessment was made of individual progress through observation and regular tests.

Pupils generally responded favorably to the program. A knowledge of scores and progress by each individual through corrected tests was probably the greatest single motivating factor, or in other words, a desire to spell well. Another motivating activity was reading aloud to the class by the teacher the stories written by pupils. Being

able to read what was written with ease and clarity was almost universally interpreted by pupils to mean that the spelling and writing were acceptable. Uncertainty almost always motivated pupils to check spelling, ask how to spell words, and use the dictionary.

The activities used were those which pupils would presumably use in adult life, and in present social needs. Word lists used contextually in the activities and as basic study lists were derived from standard basic lists which were believed to include words most frequently used and needed in the pupil's adult writing vocabulary. Pupil ability influenced the range of the list for individual use.

Pupils were directed by the teacher with emphasis on what the word looked like, how the word sounded, and the meaning of the word. Much repetition was given through activities which made use of plurals and word endings, as well as more than one meaning of a word. Diagnosis of spelling needs and progress were continuous.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Materials that have been well organized and planned for use as a spelling program for mentally retarded pupils have been very limited. This field study was conducted to develop a list of spelling words related to reading and language materials used by the mentally handicapped child that would have utility in everyday life, with application of intensive methods and activities for teaching the child.

I. SUMMARY

A four week field study was made during April, 1971 of a Keokuk County, Iowa Junior High Special Class spelling program. The ten pupils of the study were assigned the same identification numbers throughout the study. Cumulative records and past experience with the pupils assisted in determining limitations and methods by which each pupil learned best. Study habits were observed. The percentage of improvement on a standardized list of words was tabulated. A measurement of each pupil's ability to spell, as predicted by the Courtis Standard Learning Tests, was used as an indicator of results that could reasonably be expected of each pupil. Types of errors were analyzed to evaluate pupil ability and methods of teaching to be employed.

The activities used were those which pupils would presumably use in adult life, and in present social needs. Word lists used contextually in the activities and as a basic study list were derived from standard basic lists which were believed to include words most frequently used and needed in the pupil's adult writing vocabulary. Pupil ability influenced the range of the list for individual use. Pupils were directed by the teacher with emphasis on what the word looked like, how the word sounded, and the meaning of the word. Much repetition was given through varied activities, including the use of plurals and word endings. Tense, number, and degree are areas that are especially difficult in written language activities for the retarded child.

The use of spelling aids, such as phonic aids and the Language Master, was evaluated on an individual basis. Areas where individual and group needs could be met were considerations for further activities and intensive methods. Teacher assessment was made of individual progress through observation and regular tests.

Diagnosis of spelling needs and progress were continuous. Basic factors of the learning process, drive, cue, response, and reinforcement, were the essential components in activating the program.

II. CONCLUSIONS

Pupils generally responded favorably to the program. A knowledge of scores and progress by each individual through corrected tests was probably the greatest single motivating factor, or in other words, a desire to spell well. Another motivating activity was reading aloud to the class by the teacher the stories written by pupils. Being able to read what was written with ease and clarity was almost universally interpreted by pupils to mean that the spelling and writing were acceptable. Uncertainty almost always motivated pupils to check spelling, use the dictionary, and ask how to spell words. Pupils with low ability were beginners in the use of a dictionary as a spelling aid. Drive, or motivation, was considered of prime importance in developing the program.

In the decisions concerning what materials to use, both pupil need and pupil ability were essential factors. The standard lists of Dolch and Hildreth were used. A more extensive study could probably meet needs more specifically for the retarded pupil. Word lists should be made in terms of individual needs.

The conclusions from this study are that a specific spelling program for the educable mentally retarded pupil is needed and can be developed. Pupils can make small, but measurable gains in spelling ability. A modified spelling program has utility for them. Spelling will not be learned

in an adequate way by incidental learning or only a phonics program. This statement is borne out by the analysis of types of errors made, according to errors listed by Spache as indicative of specific learning problems. The results of the evaluation seemed valid in comparison with general work and experience with the pupils.

A test of spelling ability using a coefficient of spelling ability did not give results which seemed valid. The recommendations of Courtis included using many samples of work. More samples should give a more accurate score. Other factors influencing the score were attempts by pupils with more ability to use a larger vocabulary without using a dictionary, and many errors were made in the areas of phonetic substitutions and word endings that were incorrect. The Courtis Standard Learning Tests and teacher observation seem to be better indicators of pupil ability than the coefficient of spelling, for the retarded pupil.

III. RECOMMENDATIONS

A more extensive study is needed to develop specific activities for reinforcement of learning. The mentally retarded child needs more practice and a shorter word list than the average child. Because of these limitations, attempts should be made to develop very practical word lists. A review should be made of studies of vocabulary for

the educable mentally retarded child.¹ Other word lists might be consulted, especially Rinsland's list.²

The subjects of this study are not considered as representative of the average special education class. The small size of the group will limit the application of the findings to another group. The results are indicative of the need for effective spelling programs and more research in methods and materials to use in teaching spelling for mentally handicapped children.

¹"Crucial Vocabulary for EMRS," (Greeley, Colorado: University of Northern Colorado).

²Henry D. Rinsland, A Basic Vocabulary of Elementary School Children (New York: The Macmillan Co., 1945).

BIBLIOGRAPHY

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A. BOOKS

- Best, John W. Research in Education. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1959.
- Brueckner, Leo J., and Guy L. Bond. The Diagnosis and Treatment of Learning Difficulties. New York: Appleton-Century-Crofts, Inc., 1955.
- Campbell, William G. Form and Style in Thesis Writing. Third edition. Boston: Houghton Mifflin Co., 1959.
- Dolch, Edward William. Better Spelling. Champaign, Illinois: The Garrard Press, 1942.
- Fernald, Grace M. Remedial Techniques in Basic School Subjects. New York: McGraw-Hill Book Co., Inc., 1943.
- Fitzgerald, James A. The Teaching of Spelling. Milwaukee: The Bruce Publishing Co., 1961.
- Hildreth, Gertrude. Teaching Spelling. New York: Holt, Rinehart, and Winston, 1962.
- Hunnicut, C. W., and William J. Iverson (eds.). Research in the Three R's. New York: Harper and Brothers, Publishers, 1958.
- Kirk, Samuel A., and G. Orville Johnson. Educating the Retarded Child. Cambridge, Massachusetts: The Riverside Press, Houghton Mifflin Co., 1951.
- Rinsland, Henry D. A Basic Vocabulary of Elementary School Children. New York: The Macmillan Co., 1945.
- Rothstein, Jerome H. (ed.). Mental Retardation. New York: Holt, Rinehart, and Winston, 1964.
- Younie, William J. Instructional Approaches to Slow Learning. New York: Teachers College Press, Teachers College, Columbia University, 1967.

B. PERIODICALS

Hanna, P. R., and others. "Phoneme-grapheme Correspondences as Cues to Spelling Improvement," Elementary English, XLVI (February, 1969), 207-212.

Maxted, Mary. "Spelling Patterns With Spelling Wheels," Elementary English, XLV (November, 1968), 982-984.

Wagner, Guy. "Improving Spelling Instruction," Education, 2nd series, LXXXIX (November-December, 1968), 183-189.

C. OTHER SOURCES

"Crucial Vocabulary for EMRS," Studies Done at The University of Northern Colorado, Greeley, Colorado.

Personal Interview and Curriculum Guide, Administrative Office, Cherry Creek School District, 4700 Yosemite, Englewood, Colorado 80222, (June 3, 1971), on Spelling Research by Dr. Feldman.

APPENDIX

APPENDIX

Word List

First level

a	children	go	long
about	Christmas	going	look
after	close	good	looked
again	cold	got	lot
all	come	grade	lots
along	coming	great	
also	could		made
always	country	had	make
am		happy	man
A. M.	daddy	has	many
an	day	have	me
another	days	he	men
any	dear	heard	milk
are	did	help	Monday
around	didn't	her	more
as	do	here	morning
asked	dog	him	most
at	doll	his	mother
away	don't	home	much
	door	hope	must
baby	down	house	my
back		how	
ball	each		name
be	eat	I	never
because	every	if	new
bed		I'm	next
been	few	in	nice
before	find	into	night
best	fine	is	no
better	first	it	now
big	five		
black	for	just	of
book	found		off
boy	four	know	old
boys	friend		on
bring	from	large	once
brother	fun	last	one
but		let	only
by	gave	letter	or
	get	like	other
called	getting	little	our
came	girl	live	out
can	girls		over
car	give		
cat	glad		

people	through
place	time
play	to
played	today
please	told
plus	too
P. M.	took
pretty	town
put	tree
	two
ran	
read	until
red	up
right	us
room	
run	very
said	want
Santa Claus	wanted
saw	was
say	water
school	way
see	week
she	well
should	went
sister	were
snow	what
so	where
some	which
something	while
soon	white
started	who
summer	will
sure	wish
	with
take	work
teacher	would
tell	write
than	
that	year
the	years
their	you
them	your
then	
there	
these	
they	
thing	
things	
think	
this	
thought	
three	

Second level

across	bushel	drink	gets
afraid	buy	during	goes
afternoon			gold
ago	cake	early	gone
aim	call	eating	good-bye
air	camp	eggs	(good-by)
airplane	candy	eight	government
almost	can't	end	grandmother
animals	care	enough	grass
answer	careful	eraser	green
anything	careless	even	greet
apple	cars	evening	ground
apples	catch	ever	grow
April	caught	everything	guess
arithmetic	chew	eyes	gun
ask	church		
ate	city	face	hair
Aug.	class	fall	half
aunt	clean	family	hand
	clothes	far	hands
bad	coal	farm	happened
barn	coat	fast	hard
bear	colt	fat	hat
beautiful	comes	Feb.	haven't
becoming	corn	feed	having
began	cotton	feet	head
behave	couldn't	fell	hear
being	cousin	fight	high
between	cow	finally	hill
bird	cows	finished	hit
birds	cracker	fire	hold
birthday	cut	fish	hole
bless		fishing	horse
blue	dare	flashlight	horses
boat	dark	floor	hot
body	Dec.	flowers	hour
books	decided	fly	houses
born	died	fold	how's
both	different	foot	hundred
bought	dinner	Friday	hunting
box	dishes	friends	hurt
bread	does	front	
broke	dogs	full	ice
brought	doing	funny	I'll
brown	dolls		important
building	done	game	interesting
built	dove	games	iron
	dress		

isn't	Miss	ride	suit
it's	miss	riding	sun
its	money	river	Sunday
I've	mountains	road	supper
	Mr.	rode	suppose
Jan.	Mrs.	running	swimming
jump	music		
jumped	myself	same	table
July		sat	taken
June	named	Saturday	teachers
	near	says	ten
keep	nearly	sea	thank
kept	nine	second	Thanksgiving
kill	nothing	seen	that's
killed	Nov.	send	third
kind	nuts	sent	those
kinds		Sept.	Thurs.
king	o'clock	set	till
knew	Oct.	seven	times
	oh	shall	tired
lake	open	sheep	together
land	opened	ship	tomato
later	others	shoes	tomorrow
learn	outside	shot	top
learned	own	show	toys
leave		sick	train
leaves	pair	side	trees
left	paper	since	tried
lend	park	sing	trip
letters	part	sit	truly
life	party	six	try
light	person	sled	trying
liked	pet	sleep	Tues.
likes	picture	small	turkey
line	pictures	snap	turn
lived	piece	sometimes	turned
looking	plant	sorry	
lost	playing	spelling	uncle
lunch	plays	spring	under
	poor	start	upon
makes	present	state	use
making	presents	stay	used
mamma		stayed	
(mama)	quart	still	vacation
	quite	stop	visit
May		stopped	
may	rabbit	store	wagon
meat	rain	story	wait
merry	reading	street	walk
might	ready	studying	walked
miles	real	such	
mine	received		
minutes	rest		

wants
war
warm
wash
wasn't
watch
wear
weather
Wed.
weeks
why
wind
window
windows
winter
without
woman
won't
wood
woods
working
world
wouldn't
writing
wrote

yard
yellow
yes
yesterday
yet
you'd
young
yours

zipper
zoo
